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ABSTRACT

The recent concern for basic writing abilities presumes that writing is the primary context in which one learns to "think," and that such thinking can be generalized to all other academic disciplines. Linguists may ask whether literacy has any effect on mental functioning. If literacy is defined as the ability to record what can be spoken, decode what is written, and evaluate what is written, the triad criterion separates basic literacy from higher literacy. The phylogenetic hypothesis on the effects of literacy asks what civilizing effects literacy has on people in general, and the ontogenetic approach asks how an individual's cognitive functions alter upon becoming literate. Some studies indicate that schooled literacy has a positive effect on thinking abilities, but tests with literate people with no schooling indicate that metalinguistic skills may not spontaneously emerge from learning to write. Where college English is concerned, teachers assume that because literacy in principle allows higher skills of language evaluation, it automatically entails such skills. Until teachers can distinguish those cognitive skills literacy may make possible from those which it necessarily entails, they cannot determine how much of higher education is bound up in learning to write, and how much involves skills of a different sort. (HTH)

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Writing Redux

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I. The Problem

Higher education has, of late, bemoaned the purported decline in students' ability to write the English language. Colleges across the land have begun courses in "Bonehead English", and students may spend as much time in writing lab as in chemistry lab.

Why the sudden concern with writing abilities? Sceptics argue that nothing has happened, that "back to basics" movements appear in academia with the regularity of the 17 year locust. Pundits in the liberal arts claim that a real decline is upon us, and they caution us that writing provides the foundation for a liberal arts education - sloppy writing bespeaks sloppy thinking. This latter day version of 19th century faculty psychology presumes, first, that writing is the primary context in which one learns to "think" and second, that once "thinking" is developed in the context of literacy, it can be generalized to other realms of academia from philosophy to physics.

What does this have to do with linguistics?

As linguists, we study, among other things, the relationship between language and thought. Though most of our efforts have focused on possible linkages between speech and cognitive activity, we may also ask whether literacy abilities have any effect upon general mental functioning.

There is a burgeoning literature on the possible impact of literacy on human thought. Grandiose claims have been put forth, generalizations emerge on the basis of isolated historical instances, and testable hypotheses are few and far between. Yet I suggest that if such conjectures can be clearly articulated, they might help us evaluate contemporary mutterings in academia that poor writing ability is a sure sign of stunted mental growth.

Before considering the benefits of literacy and evaluating them in light of educated middle class America, we will need working definitions of "literacy" and "thinking". We will define "literacy" as

- (1) the ability to record in writing anything one is capable of saying
- (2) the ability to decode the equivalent of what one has written

and

- (3) the ability to create "new" language in a durable medium.

It is this third criterion which I take to separate "basic" literacy (i.e. the ability to read and write) from the higher literacy.¹

As we look at the literature on literacy, we see "thinking" identified with a host of different abilities - the ability to make taxonomies; to construct or evaluate an argument; to talk about language; to be creative. For purposes of

this discussion, we will include all of these abilities when we talk about "thinking".

II. Hypotheses about the Effects of Literacy upon Thinking

Broadly speaking, two genres of hypotheses have been proposed about the effects of literacy upon human thought.² The first are phylogenetic or historical in character: what civilizing effects does literacy have upon people in general, or how have developments in literacy at a particular time altered the subsequent course of human history? The other approach is ontogenetic: when a given individual becomes literate, how does his or her cognitive functioning alter? Unfortunately, historical arguments have tended to become confused with synchronic arguments (Scribner and Cole, 1978). To avoid false universalization, we will need to determine which historical arguments have bearing on contemporary times, and which ontogenetic data have bearing on the development of the higher literacy among adults.

Phylogenetic Hypotheses

The intellectual roots of the phylogenetic hypothesis can be found in the writings of Durkheim (1915), Lévy-Bruhl (1966), and Lévi-Strauss (1966).³ To oversimplify the argument, one can distinguish between "primitive" thought and "domesticated" thought among peoples of the world. Primitive thought is concrete, mythical, and not logical. Domesticated thought is capable of abstraction, historical understanding, and logic. While such a dichotomy is clearly too rigid (e.g. Evans-Pritchard proved that the Azande of the Sudan have highly logical belief systems; western man is often illogical and mythical - see Goody and Watt 1968:43), Jack Goody and Ian Watt (1968:43-44) have suggested that the traditional distinction between primitive and civilized thinking may actually be a dichotomy between non-literate and literate societies.

What does literacy do for a people? According to Goody and Watt, it enables them

- (1) to construct formal definitions of words in language (Since words can be used when the referents to which they are applied are not physically present, words acquire meanings of their own which are not context-dependent).
- (2) to separate the past from the present (Recorded history can no longer be manipulated and "rewritten" as can oral tradition.)
- (3) to be critical of a cultural tradition (Once a cultural tradition is written down, one can see inconsistencies which were not evident in verbal transmission.)

Eric Havelock (1963, 1973, 1976, 1976-77) has argued that many of these effects

of literacy first emerged in a specific context: the development of the Greek alphabet around 750 B.C. Once Greeks added symbols for vowels to the Phoenician script

- (1) it became possible to represent speech unambiguously (because there was a written symbol for every sound in speech, unlike the earlier syllabic systems of Mesopotamia or the vowelless system of the Semitic languages)
- (2) it became possible for a large number of people to become literate (since the script was easy to learn and easy to decipher)

More importantly,

- (3) people were able to break out of conventional modes of thinking and to develop new ideas

This last point needs explanation. A strong oral tradition centered around Homer's Iliad and Odyssey dominated Greek culture from sometime around 1000 B.C. down to classical Athens (5th c B.C.). The epics were perpetuated through oral recitation, not being written down until at least 750 or 700 B.C. We know from the work of Milman Parry (1930, 1932) and Albert Lord (1960) that the composition - and remembering - of lengthy poems such as these is possible through use of formulaics, that is, stylized, repeatable ways for representing information.⁴ Initially the new Greek alphabet was used to write down earlier formulaic oral compositions (e.g. the Iliad). Later, however, it recorded what contemporary people said - and what they were thinking about. Hence, claims Havelock, the development of Greek and post Greek science and philosophy.

The last step in this argument is empirically and logically unwarranted.⁵ More justifiable is Havelock's general argument that objectifying our thoughts in a form that allows them to be contemplated and scrutinized by ourselves and by others fosters creativity. If science is the making of conjectures which, upon examination, we then decide either to retain or reject (Popper, 1963), then writing aids us in the practice of scientific thinking.

David Olson (1977) develops the phylogenetic argument along more strictly linguistic lines. Much like Goody and Watt's argument that literacy enables us to define words separately from the contexts in which they are used, Olson distinguishes between "utterance meaning" (i.e. meaning which is clear only from the context in which an utterance is made) and "text meaning" (meaning which is intelligible without reference to context). The development of literacy (and text meaning) allows greater clarity of thinking by making the writer more aware of the logical structure of his language.⁶

Ontogenetic Hypotheses

What might global pronouncements about the effects of literacy on thinking have to do with contemporary people learning to write? The question can be asked about two types of populations: first, people becoming literate in cultures which are largely or wholly non-literate (e.g. Africa); and second, children learning to read and write where literacy is the norm (e.g. the U.S.). Today we only have time to discuss the first group.

Jerome Bruner and Patricia Greenfield (e.g. Greenfield 1972) have investigated cross-cultural differences in cognitive development. Comparing three populations of Wolof children in Senegal (unschooled; schooled but living in the bush; schooled and living in urban Dakar), Greenfield concludes that literacy improves children's cognitive development as measured by (non-written) categorization tasks. Children were asked to group items together and then to explain the basis of their grouping; the schooled children out-performed the unschooled, non-literate children. Greenfield argues that these cognitive effects reflect improved general mental capacity. Literacy leads to the development of "written" (as opposed to "oral") speech. Paralleling Olson's distinction between utterance meaning and text meaning, "oral speech" is highly context bound, while "written speech" allows the speaker to make cogent reference to things not present.⁷

On the face of things, these and other⁸ formally executed psychological studies suggest that literacy does have a positive effect upon our ability to think. The historical hypotheses of Goody and Watt, Havelock, and Olson would seem to have found empirical validation.

But the story is not complete.

Sylvia Scribner and Michael Cole (e.g. 1978) point up a methodological problem with earlier cross-cultural studies: the conflation of schooling and literacy. Might Greenfield's results reflect the effects of formal schooling on cognitive behavior rather than the effects of literacy per se? The Vai of Liberia present an ideal context for probing this hypothesis, in that they have developed and perpetuated an indigenous script outside of the context of formal schooling. Therefore, it is possible to be sure of studying the effects of literacy (and not schooling) on cognition by comparing non-schooled literate and non-schooled non-literate Vai adults.

Scribner and Cole's experiments yield seemingly contradictory results. On some tasks the literate Vai showed superior performance, while on others, literacy made little difference. For example, on sorting and verbal reasoning tasks of the type Greenfield did with the Wolof, literacy had little effect upon performance. Good scores correlated only with amount of schooling. In experiments designed to test metalinguistic skills (e.g. ability to separate an object from its name, reasoning

from syllogisms, defining words), again there was no improved performance among Vai literates. However, in tests utilizing those contexts in which Vai literates actually use writing, literates outdistanced their non-literate counterparts. The most common use of the Vai script is in letter writing, which entails communicating a message to an interlocutor who is not present. When subjects were asked to explain a game (without the game being present) to a naïve listener, or to dictate the same information in a letter to an absent interlocutor, the literate Vai surpassed their non-literate tribesmen.

It is therefore misleading to speak of literacy as having some general mental effects on people such as "abstract thinking" or "logical operations" (Scribner and Cole, 1978:451). Rather, what literacy entails is a set of specific skills which might later be generalized to related contexts - such as explaining the rules of a game without the game being present. Schooling teaches another set of skills, some of which interrelate with literacy skills. Thus, for example, metalinguistic skills may need to be explicitly taught. We cannot assume they will spontaneously emerge from children's learning to record speech on paper. We must determine what else we are teaching when we teach children to be literate. It is fruitless to expect that all attributes of thought with which one might associate literacy will necessarily surface each time a person merely learns to read and write.

III. The Higher Literacy

Which brings us to the issue with which we began: the writing abilities of contemporary college-educated adults.

American college students fall between the phylogenetic or ontogenetic stools. They are not comparable to the Greeks or Africans who are developing literacy for the first time, nor to American six year olds learning to read and write within a milieu of literacy. Returning to our original definition of literacy, college students can record and decode the equivalent of speech. But can they create "new" language in a durable medium? It is here that cognitive effects of literacy come into play in higher education.

We have seen that literacy (perhaps coupled with schooling, perhaps coupled with unspecified social forces) has been credited with having a number of mental effects. Taken together, these can be viewed as means of distancing language from oneself:

1. separation of language from context

The first level of linguistic distancing through literacy enables the writer to separate language from the context in which it is used, enabling him, in turn, to determine his contextual closeness or distance from his reader.

(As Olson and Greenfield point out, these skills manifest themselves, in turn, in spoken language as well.)

2. the ability to talk about language

The next level of linguistic distancing through literacy enables the writer (or speaker) to use language to talk about language - to distinguish between thing and name, to talk about grammaticality, to define words, etc.

3. the ability to evaluate one's own use of language

The final - and most difficult - level of linguistic distancing through literacy enables the writer to organize, evaluate, and generate information. This entails

- a. the ability to make taxonomies
- b. the ability to evaluate an argument which has been made objective in print (either one's own or someone else's)
- c. the potential for coming up with something new

The experiments of Scribner and Cole suggest that literacy creates a rudimentary separation of language from context. Their experiments also indicate that formal schooling may be needed for learning to talk about language. Outside of Greenfield's experiments showing effects of schooling and literacy on the most basic forms of taxonomy, we lack experimental evidence on the role of literacy in evaluating our own use of language.

If we leave aside grammar corrections and suggestions about style, it is for lack of this self-criticism that college teachers most fault their students' writing. And yet, upon reflection, it seems we have made a curious historical transference in our thinking: while historically literacy may have made possible this kind of evaluation of one's own language, we have begun to assume that higher literacy necessarily entails such evaluative abilities.

As educators, we might ask ourselves three questions:

1. Do we need to train our students in these literacy-related skills?
(And if so, what kind of training should it be?)
2. Do students have any immediately relevant contexts in their own non-academic experiences to which they can generalize this learning?
3. Are there other forces which work against such linguistic distancing?

If we do not teach students how to taxonomize or evaluate arguments, or to come up with new ideas, can we reasonably expect that because literacy in principle allows such evaluation it will necessarily appear? If students' non-academic (or post academic) lives have few contexts which parallel the writing of formal compositions or term papers, should we believe students will generalize whatever literacy skills

we have taught them in formal contexts to these structurally unrelated contexts? If students take spoken language as their model for writing, and contemporary speech is riddled with clichés, might not the contemporary student's attempts to break the confines of ritualistic thought resemble those of epic-bound 6th c Greece?

Until we learn to distinguish those cognitive skills literacy may make possible from those literacy necessarily entails, we cannot determine how much of higher education is bound up with learning to write, and how much involves skills of a different sort. By attempting to understand the linguistic and cognitive variables involved in the higher literacy, we may end up saving teachers and students a great deal of unnecessary pain. What's more, we may put the talents of academically, civic-minded linguists to good use.

Footnotes

1. In other societies, the meaning of "literacy" has been even more restrictive. In early modern Europe, one might be considered literate if one knew how to read but not how to write. In other cases, knowing how to sign one's name placed one among the literate. The criterion that general literacy requires one to be able to create something new in written language is very recent. See Resnick and Resnick (1977).
2. It can be argued that literacy has a profound effect upon social interaction as well. Goody and Watt (1963) suggest that literacy enables people
 - (a) to separate individual experience from activity of the group (Individuals can now record their personal exploits, feelings, and interpretations.)
 - (b) to break down social stratification (Once writing is available to the populace at large, laws can be made public to all, and the average person can make use of writing for running his personal affairs. In the process, argue Goody and Watt and David Harvey (1966), the development of political democracy was fostered in 5th century Athens - although see Havelock (1976) for a contrary view.)

There is not time in the present discussion to deal with the social implications of literacy.

3. In a somewhat different context, see also the work of Max Weber.
4. Havelock (1963) argues that Plato's objection to the poets (in the Republic) was that they perpetuated the stylized thinking of old, through the use of formulaics, and did not allow new ideas to be articulated through unrestricted prose.
5. Harvey (1978) argues, for example that Mesopotamia had earlier developed important new ideas without the benefit of alphabetic writing, and that the Arabs and Chinese would make important contributions to science despite non-alphabetic scripts.
6. The emphasis on written prose (in Greece)... permitted the abstraction

of logical procedures that could serve as the rules for thinking... The Greeks, thinking that they had discovered a method for determining objective truth, were in fact doing little more than detecting the properties implicit in their native tongue. Their rules for mind were not rules for thinking but rather rules for using language consistently; the abstract properties of their category system were not true or unbiased descriptions of reality but rather invariants in the structure of their language. (Olson 1977:267)

7. This distinction, so Greenfield argues, is equally applicable to contemporary Western society. Lower class children (and parents) in the United States and England use more context-bound speech than do their middle-class counterparts.
8. Additional cross-cultural evidence supports Greenfield's thesis that literate speakers do better on select cognitive tasks than do their non-literate counterparts. Cole, Gay, and Glick (1969) (cited by Greenfield 1972) compared the abilities of two Liberian tribes, the Kpelle and the Vai, to communicate information across a visual barrier. The Vai, who were literate in this case, were uniformly better communicators than the Kpelle, who were not. Another study by Cole, Glick, and Sharp (1971) found that on a memory task, literate Kpelle remembered more items than did non-literate Kpelle, and literate Vai remembered more items than did their non-literate tribal counterparts.

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